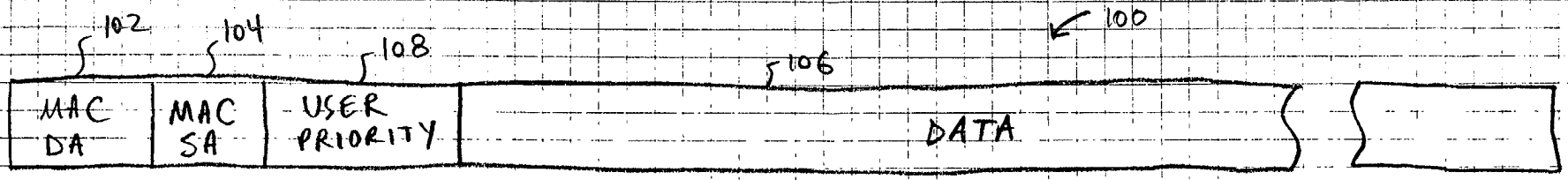


FIG. 1A (PRIOR ART)

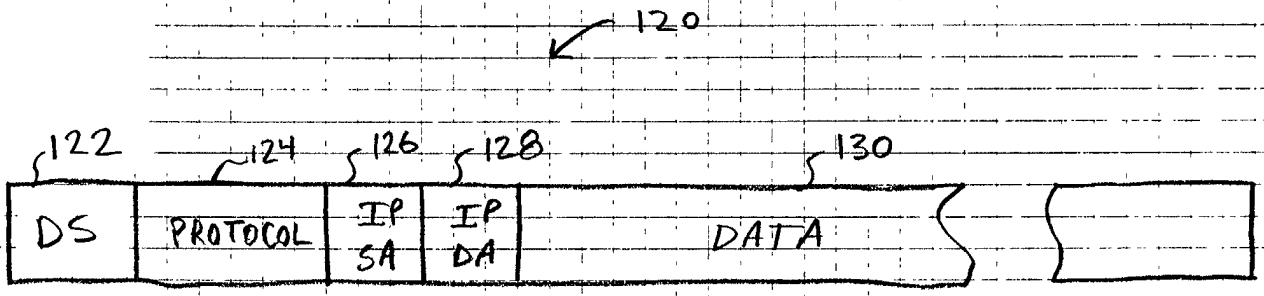


FIG. 1B (PRIOR ART)

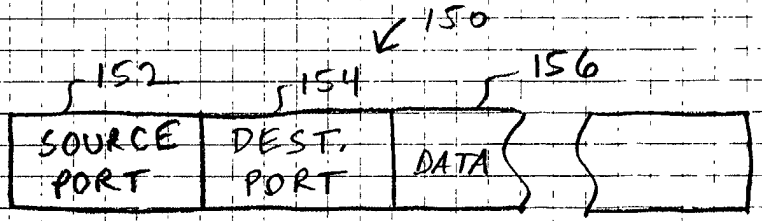


FIG. 1C (PRIOR ART)

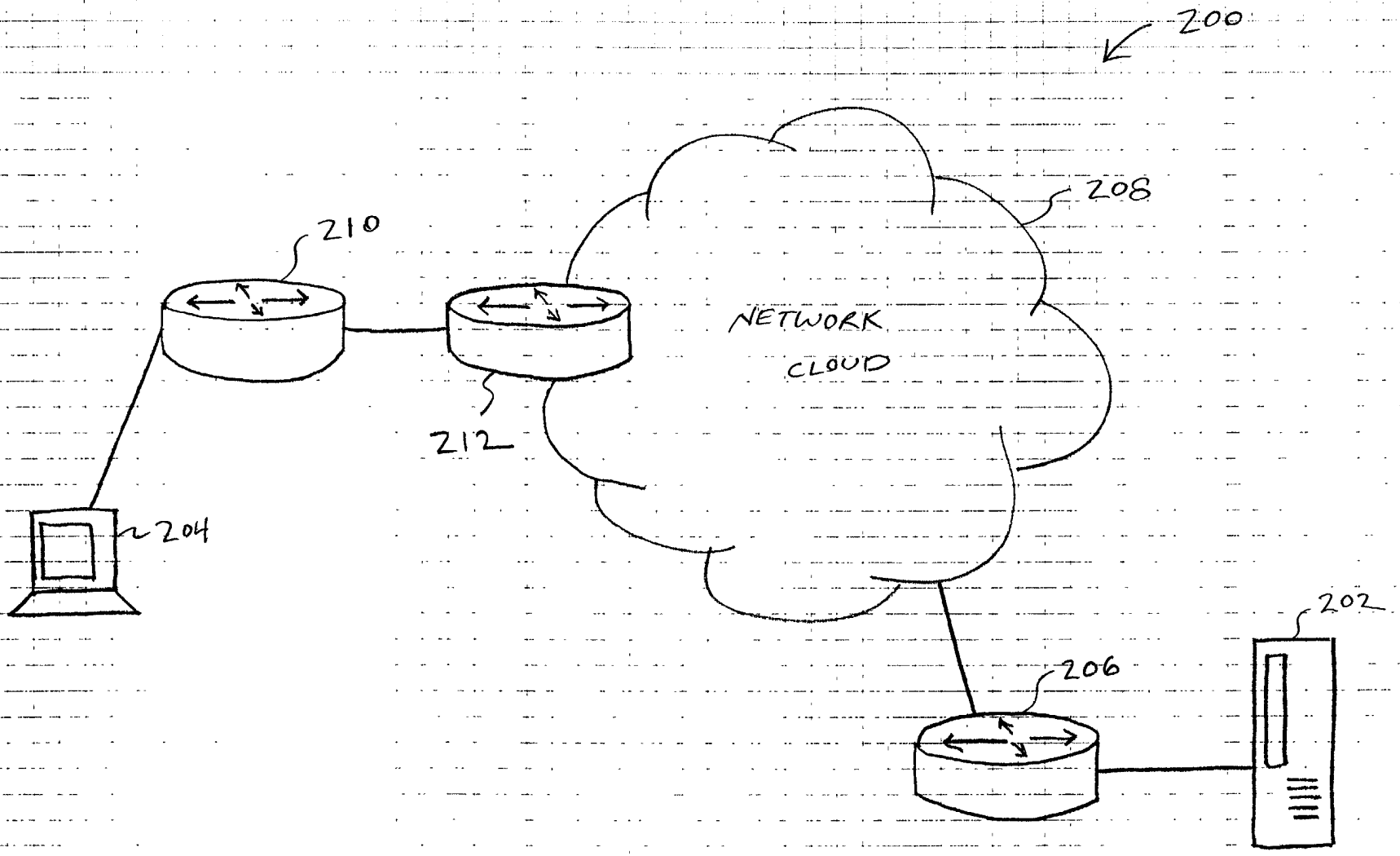


FIG. 2

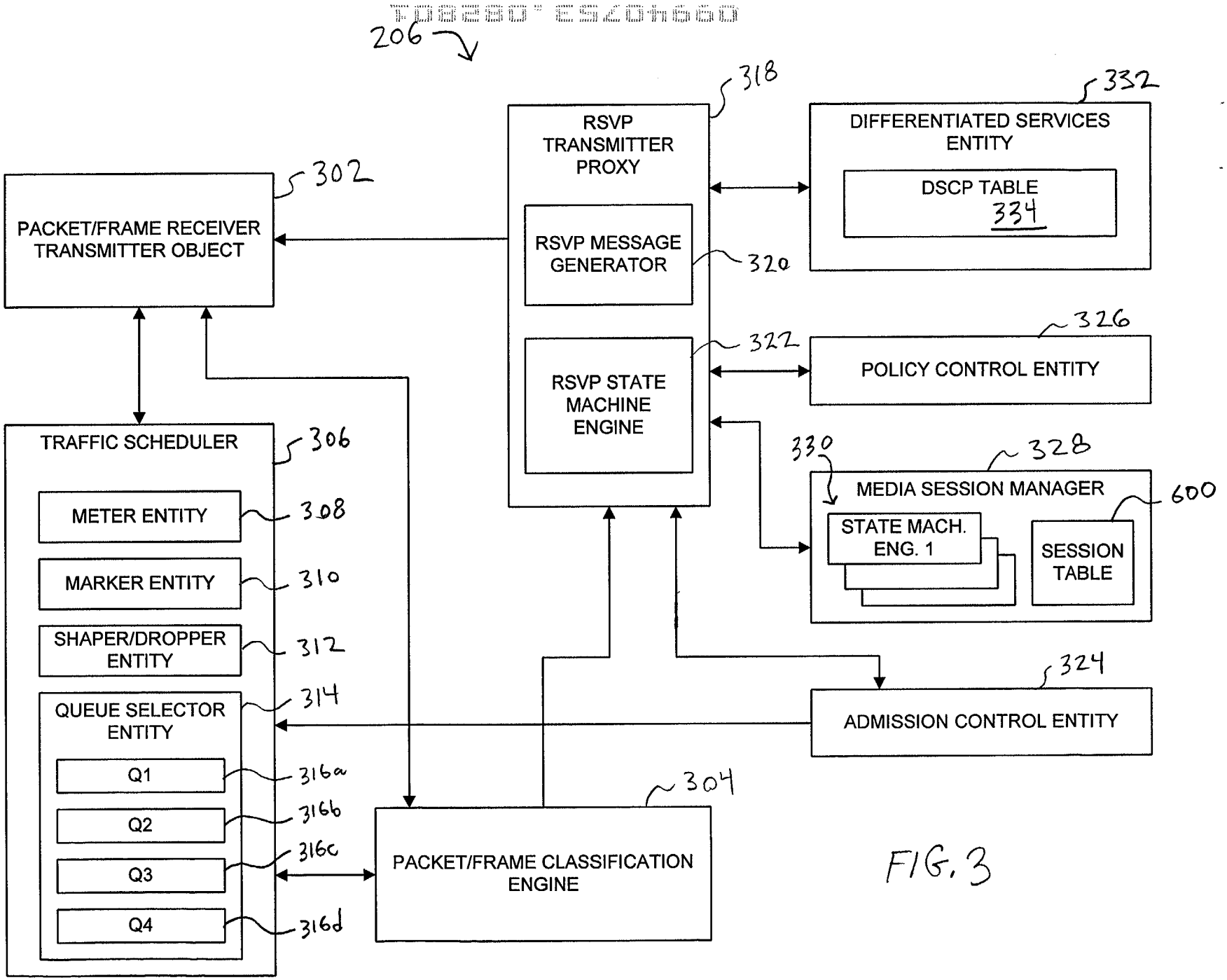
206
318
RSVP TRANSMITTER PROXY
332
DIFFERENTIATED SERVICES ENTITY
DSCP TABLE
334
302
PACKET/FRAME RECEIVER TRANSMITTER OBJECT
RSVP MESSAGE GENERATOR
320
326
322
RSVP STATE MACHINE ENGINE
POLICY CONTROL ENTITY
330
328
MEDIA SESSION MANAGER
600
STATE MACH. ENG. 1
SESSION TABLE
TRAFFIC SCHEDULER
306
METER ENTITY
308
MARKER ENTITY
310
SHAPER/DROPPER ENTITY
312
QUEUE SELECTOR ENTITY
314
324
ADMISSION CONTROL ENTITY
Q1
316a
Q2
316b
Q3
316c
Q4
316d
304
PACKET/FRAME CLASSIFICATION ENGINE

FIG. 3

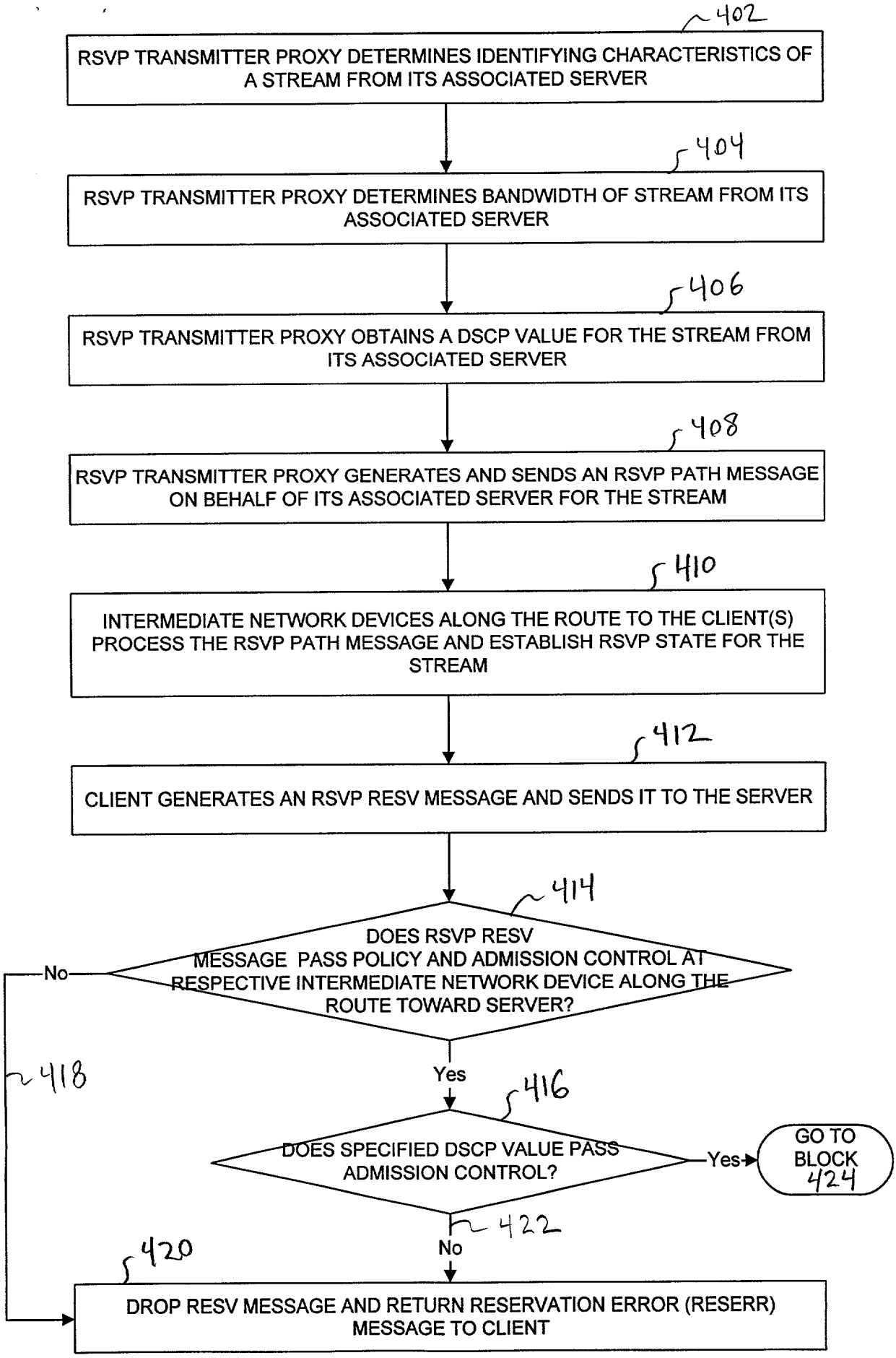
402
RSVP TRANSMITTER PROXY DETERMINES IDENTIFYING CHARACTERISTICS OF A STREAM FROM ITS ASSOCIATED SERVER
404
RSVP TRANSMITTER PROXY DETERMINES BANDWIDTH OF STREAM FROM ITS ASSOCIATED SERVER
406
RSVP TRANSMITTER PROXY OBTAINS A DSCP VALUE FOR THE STREAM FROM ITS ASSOCIATED SERVER
408
RSVP TRANSMITTER PROXY GENERATES AND SENDS AN RSVP PATH MESSAGE ON BEHALF OF ITS ASSOCIATED SERVER FOR THE STREAM
410
INTERMEDIATE NETWORK DEVICES ALONG THE ROUTE TO THE CLIENT(S) PROCESS THE RSVP PATH MESSAGE AND ESTABLISH RSVP STATE FOR THE STREAM
412
CLIENT GENERATES AN RSVP RESV MESSAGE AND SENDS IT TO THE SERVER
414
DOES RSVP RESV MESSAGE PASS POLICY AND ADMISSION CONTROL AT RESPECTIVE INTERMEDIATE NETWORK DEVICE ALONG THE ROUTE TOWARD SERVER?
No
Yes
418
416
DOES SPECIFIED DSCP VALUE PASS ADMISSION CONTROL?
Yes
GO TO BLOCK 424
422
No
420
DROP RESV MESSAGE AND RETURN RESERVATION ERROR (RESERR) MESSAGE TO CLIENT

FIG. 4A

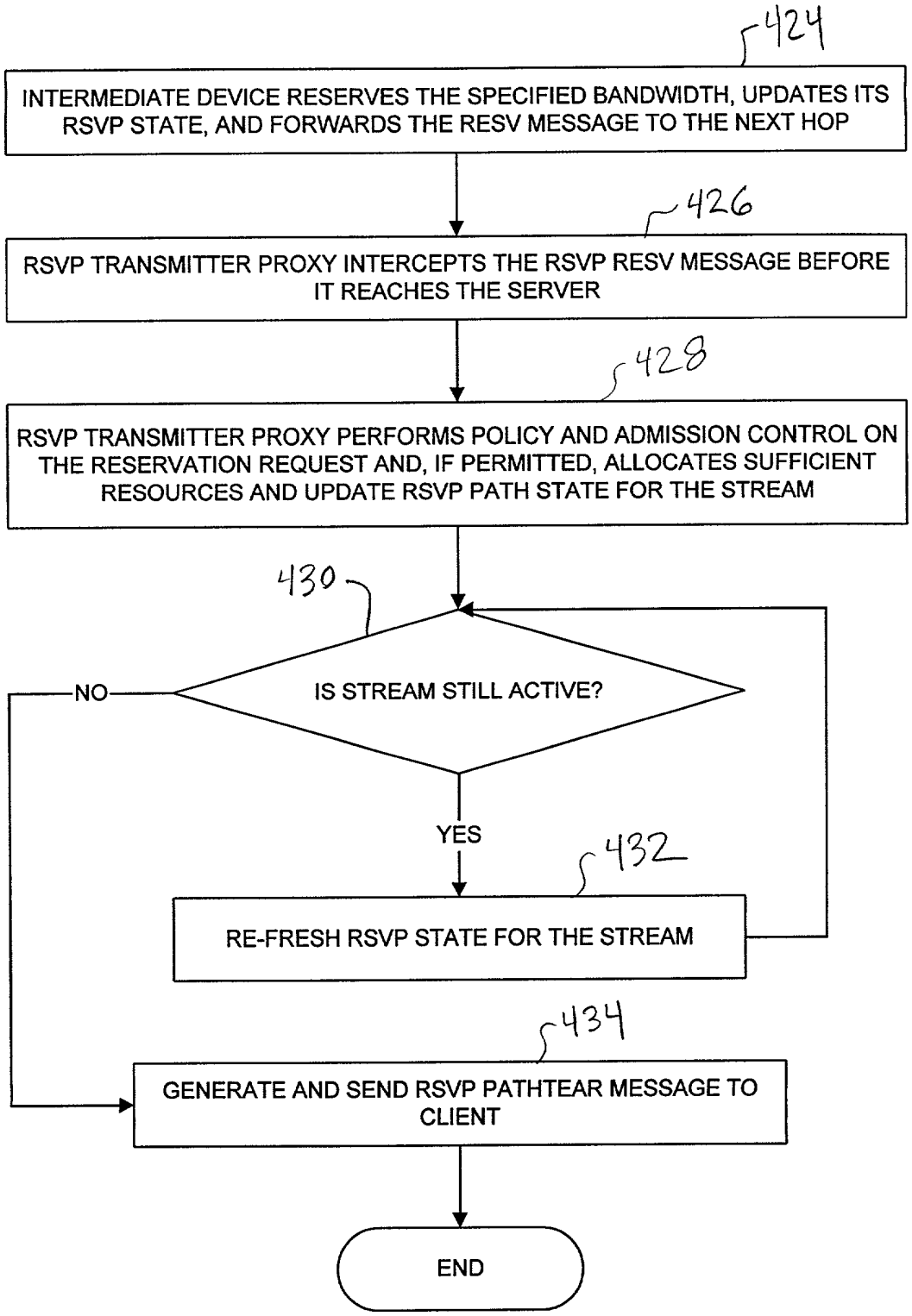
424
INTERMEDIATE DEVICE RESERVES THE SPECIFIED BANDWIDTH, UPDATES ITS RSVP STATE, AND FORWARDS THE RESV MESSAGE TO THE NEXT HOP
426
RSVP TRANSMITTER PROXY INTERCEPTS THE RSVP RESV MESSAGE BEFORE IT REACHES THE SERVER
428
RSVP TRANSMITTER PROXY PERFORMS POLICY AND ADMISSION CONTROL ON THE RESERVATION REQUEST AND, IF PERMITTED, ALLOCATES SUFFICIENT RESOURCES AND UPDATE RSVP PATH STATE FOR THE STREAM
430
IS STREAM STILL ACTIVE?
NO
YES
432
RE-FRESH RSVP STATE FOR THE STREAM
434
GENERATE AND SEND RSVP PATHTEAR MESSAGE TO CLIENT
END

FIG. 4B

500
DESCRIBE rtsp://server.example.com/fizzle/foo RTSP/1.0 502
CSeq: 312 504
<CRLF> 506

FIG. 5A

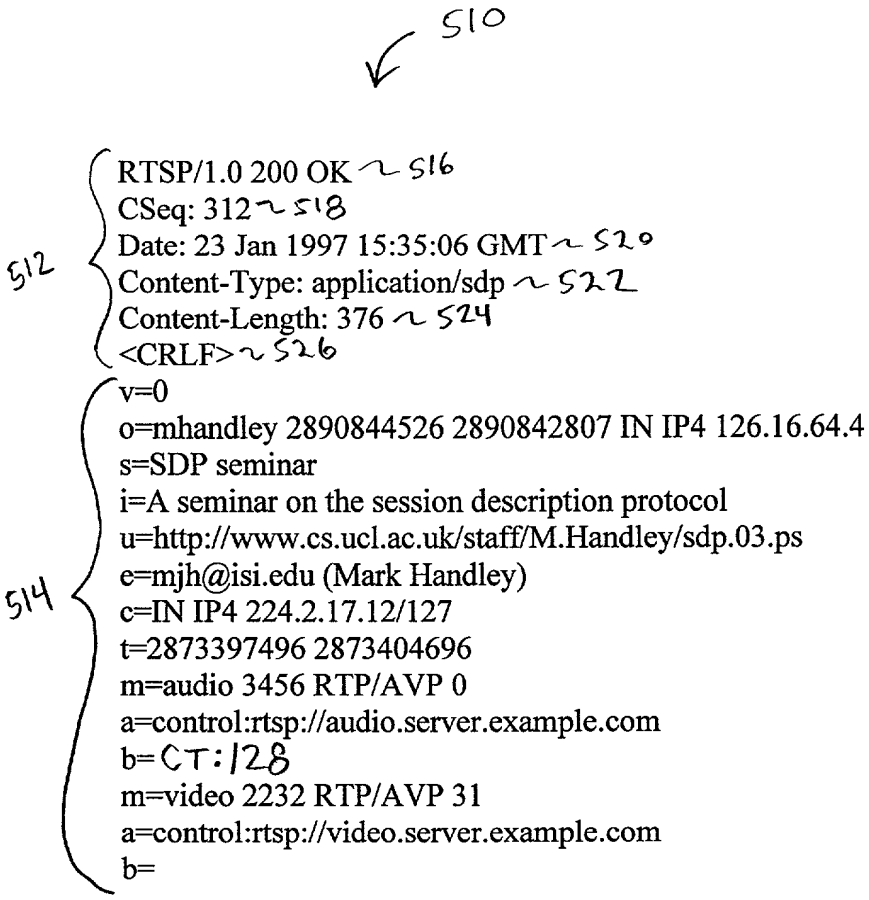
510
512
RTSP/1.0 200 OK 516
CSeq: 312 518
Date: 23 Jan 1997 15:35:06 GMT 520
Content-Type: application/sdp 522
Content-Length: 376 524
<CRLF> 526
514
v=0
o=mhandley 2890844526 2890842807 IN IP4 126.16.64.4
s=SDP seminar
i=A seminar on the session description protocol
u=http://www.cs.ucl.ac.uk/staff/M.Handley/sdp.03.ps
e=mjh@isi.edu (Mark Handley)
c=IN IP4 224.2.17.12/127
t=2873397496 2873404696
m=audio 3456 RTP/AVP 0
a=control:rtsp://audio.server.example.com
b=CT:128
m=video 2232 RTP/AVP 31
a=control:rtsp://video.server.example.com
b=

FIG. 5B

530

SETUP rtsp://server.example.com/fizzle/foo RTSP/1.0 ~ 532
CSeq: 302 ~ 534
Transport: RTP/AVP;unicast;client_port=4588-4589 ~ 536

FIG. 5C

540

RTSP/1.0 200 OK ~ 542
CSeq: 302 ~ 544
Date: 23 Jan 1997 15:35:06 GMT ~ 546
Session: 47112344 ~ 548
Transport: RTP/AVP;unicast;client_port=4588-4589;server_port=6256-6257 ~ 550

FIG. 5D

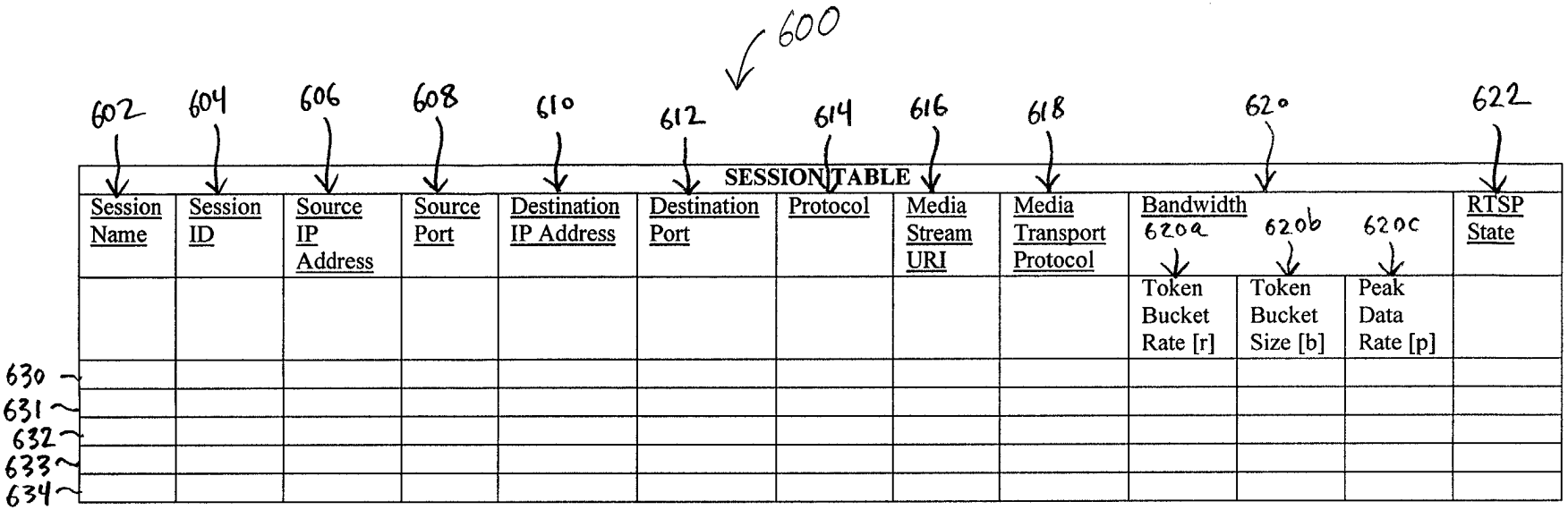
600
602
604
606
608
610
612
614
616
618
620
622
SESSION TABLE
Session Name
Session ID
Source IP Address
Source Port
Destination IP Address
Destination Port
Protocol
Media Stream URI
Media Transport Protocol
Bandwidth
620a
620b
620c
Token Bucket Rate [r]
Token Bucket Size [b]
Peak Data Rate [p]
RTSP State
630
631
632
633
634

FIG. 6

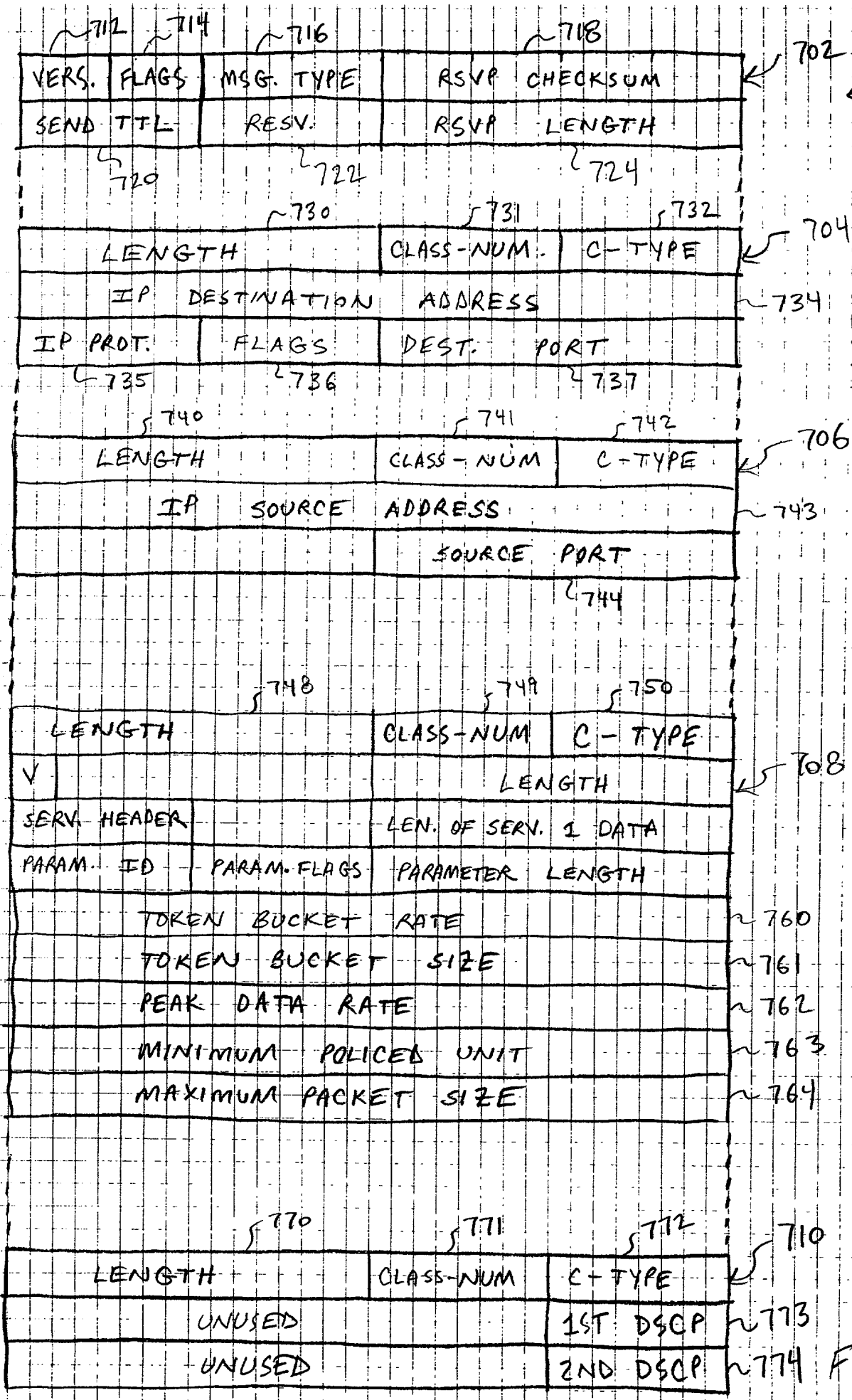
712
714
716
718
VERS.
FLAGS
MSG. TYPE
RSVP CHECKSUM
702
700
SEND TTL
RESV.
RSVP LENGTH
720
722
724
730
731
732
LENGTH
CLASS-NUM.
C-TYPE
704
IP DESTINATION ADDRESS
734
IP PROT.
FLAGS
DEST. PORT
735
736
737
740
741
742
LENGTH
CLASS-NUM
C-TYPE
706
IP SOURCE ADDRESS
743
SOURCE PORT
744
748
749
750
LENGTH
CLASS-NUM
C-TYPE
V
LENGTH
708
SERV. HEADER
LEN. OF SERV. 1 DATA
PARAM. ID
PARAM. FLAGS
PARAMETER LENGTH
TOKEN BUCKET RATE
760
TOKEN BUCKET SIZE
761
PEAK DATA RATE
762
MINIMUM POLICED UNIT
763
MAXIMUM PACKET SIZE
764
770
771
772
LENGTH
CLASS-NUM
C-TYPE
710
UNUSED
1ST DSCP
773
UNUSED
2ND DSCP
774

FIG. 7